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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/759,747

01/15/2004

Johan D. Overby

9131.0020-00

6889

22852

7590

08/29/2006

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER  
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EXAMINER

WHITTINGTON, KENNETH

ART UNIT

PAPER NUMBER

2862

DATE MAILED: 08/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/759,747	<b>Applicant(s)</b> OVERBY ET AL.	
	<b>Examiner</b> Kenneth J. Whittington	<b>Art Unit</b> 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-35 is/are pending in the application.  
4a) Of the above claim(s) 1-17 and 25-27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 and 21-24 is/are allowed.
- 6) ☒ Claim(s) 28,29 and 33-35 is/are rejected.
- 7) ☒ Claim(s) 30-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION**

The Amendment filed July 17, 2006 has been entered and considered.

***Allowable Subject Matter***

Claims 18 and 22-24 are allowed.

7       The following is an examiner's statement of reasons for allowance: these claims are allowed for the same reasons as outlined in the Office Action mailed February 17, 2006.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on  
14 Statement of Reasons for Allowance."

Claims 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not show a  
21 delay phase adjustment to provide a delay phase of substantially zero at the end of the electromagnetic pulse, as recited in the

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claims, and in combination with the other features of the claims.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7        Claims 28, 29 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. (US 6,977,504), hereinafter Wright, in view of Royle et al. (US 6,617,856), hereinafter Royle. Regarding these claims, Wright teaches a method for locating one or more markers comprising:

14        generating a series of electromagnetic pulses (See Wright col. 8, line 61 to col. 9, line 16 and col. 10, line 49 to col. 11, line 15);

receiving signals as a function of time between application of the pulses (See col. 9, lines 4-27);

averaging the signals over a predetermined number of pulses to obtain an average decay signal (See col. 9, lines 35-47);

21        initially determining a frequency, field strength, and phase for responses from the one or more markers (See col. 11, lines 16-26);

accurately determining the frequency, field strength, and phase by successive elimination of a contribution from each of

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the one or more markers and refining the electromagnetic pulses in order to provide resonant frequencies for each of the one or more markers (See col. 11, lines 27-52 and also col. 11, line 53 to col. 12, line 57);

wherein generating a series of electromagnetic pulses includes: generating a transmit signal with resonant frequencies  
7 from at least one marker and applying the transmit signal to an electromagnetic generator (See col. 11, lines 44-52).

However, Wright does not explicitly teaches marker localization method to determine utility locations. Royle teaches using conventional marker locators associated with utilities to determine the location and type utilities (See Royle col. 1, lines 43-65). It would have been obvious at the  
14 time the invention was made to use the marker locator of Wright to located markers associated with utilities. One having ordinary skill in the art would have been motivated to do so to use a marker locator system to find the position and/or location of various utilities (See Royle col. 1, lines 43-65).

Claims 28, 29, 33, 34 and 35 are rejected under 35 U.S.C.  
21 103(a) as being unpatentable over Rodgers et al. (US 6,362,737), hereinafter Rodgers, in view of McEwan et al. (US 5,512,834),

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hereinafter McEwan and Royle. Regarding these claims, Rodgers teaches an object identification system comprising:

generating a series of electromagnetic pulses (See Rodgers col. 11, line 45 to col. 14, line 3);

receiving signals as a function of time between application of the pulses and to obtain an average decay signal (See col.

7 14, line 17 to col. 15, line 12);

initially determining a frequency, field strength, and phase for responses from the one or more markers, accurately determining the frequency, field strength, and phase by successive elimination of a contribution from each of the one or more markers and refining the electromagnetic pulses in order to provide resonant frequencies for each of the one or more markers  
14 (See col. 17, line 1 to col. 18, line 26);

wherein generating a series of electromagnetic pulses includes: generating a transmit signal with resonant frequencies from at least one marker and applying the transmit signal to an electromagnetic generator (See same portions or paragraphs);

wherein the determining a frequency, field strength, and phase includes performing a fast Fourier transform of the  
21 average decay signal (See col. 14, line 57 to col. 15, line 12) and obtaining initial determinations of the frequency, field strength, and phase of at least one marker from parameters

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determined in the fast Fourier transform (See col. 16, lines 1-5 and col. 17, lines 1-6); and

wherein determining the frequency, field strength, and phase more accurately includes: determining a dominant marker from the initial determinations; calculating a response from the dominant marker; removing the response from the dominant marker  
7 from the average decay signal; and determining the frequency, field strength, and phase of at least one marker from the average decay signal with the response from the dominant marker removed (See col. 17, line 1 to col. 18, line 4).

However, while Rodgers mentions averaging signals by the processor and sampling the received signal (See col. 42, lines 34-39 and col. 14, lines 44-56), Rodgers does not teach  
14 averaging the signals. McEwan teaches a hidden object detector that averages 10,000 received signal prior to subsequent processing (See McEwan col. 6, lines 19-33). It would have been obvious at the time the invention was made to perform the sampling and averaging taught by McEwan in the apparatus of Rodgers. One having ordinary skill in the art would have been motivated to do so to reduce the random noise in the sampled  
21 signal and simplify the circuit (See same paragraphs of McEwan).

Furthermore, the noted combination of Rodgers in view of McEwan does not explicitly teach marker localization method to

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determine utility locations. Royle teaches using conventional marker locators associated with utilities to determine the location and type utilities (See Royle col. 1, lines 43-65). It would have been obvious at the time the invention was made to use the marker locator of Rodgers in view of McEwan to located markers associated with utilities. One having ordinary skill in the art would have been motivated to do so to use a marker locator system to find the position and/or location of various utilities (See Royle col. 1, lines 43-65).

#### ***Response to Arguments***

Applicant's arguments filed July 17, 2006 have been fully considered but they are not persuasive. In the remarks of the Amendment, Applicant asserts that the cited reference do not teach the signals are from one or more markers identifying at least one utility line. However, while the base references are not specific to their use, Royle teaches using marker locators placed near utilities to allow location and identification of such utilities.

#### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS**



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**ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS  
7 of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than  
14 SIX MONTHS from the date of this final action.

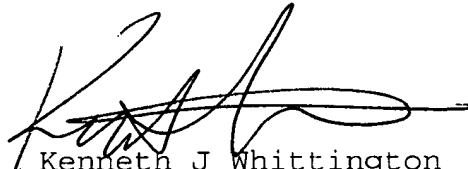
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are  
21 unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the

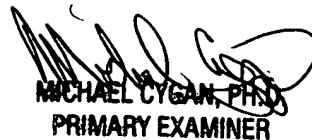
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organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status  
7 information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199  
14 (IN USA OR CANADA) or 571-272-1000.

  
Kenneth J Whittington  
Examiner  
Art Unit 2862

kjw

  
MICHAEL CYGAN, PH.D.  
PRIMARY EXAMINER